Power Tool Estimator Used for PFP Integrated Program Management Plan

The Challenge

A technician holding the portable computer with estimating software used in the field compares data with the summary tables stored on the standard personal computers in the office.

The Hanford Site has hundreds of facilities and buildings dating from the late 1940's to more recent construction. These facilities will require deactivation and decontamination (D&D) to achieve the site cleanup mission. An early step in the planning process is estimation of the required detailed tasks, resources, and costs to D&D the facilities. This is typically done using historical configuration data combined with field walkdowns. This information has often been difficult to obtain due to the vintage of construction and design media, and the sheer volume of field data to be manually recorded.

One of these facilities is the Plutonium Finishing Plant (PFP). A team of planners and estimators were preparing a major revision to the Integrated Program Management Plan for the PFP. Accurate estimates of the costs and resources to perform D&D of this complex facility were needed. The PFP includes eight non-reactor nuclear facility buildings and hundreds of rooms with a wide variety of internal piping, ductwork, equipment and other features that must be considered when planning D&D activities.

Current Approach

Past practice for this type of planning effort required manual recording of information about each room or area, using historical records and field walkdowns. The results were subject to transcription errors and, due to the large volume of data, an acceptable level of detail for planning purposes was difficult to attain. An estimator would use the manually recorded data to prepare a list of the tasks needed to clean up the room, and estimate the duration of the work done by the required engineering, planning and craft personnel. Then the estimator could add up the costs and resources to perform D&D of the room, building and facility. These estimates would then need to be rolled up into the overall planning process.

Benefits and Features

- Accurate estimates obtained in the field
- Reduces chance for transcription errors
- More detailed estimates with less manpower
- Ability to easily adjust cost and scaling factors for recalculations

New Technology

The Power Tool Estimator technology provides a portable computer and software package that is more accurate, easy to use, and requires a smaller field walkdown team compared to manually recorded data. The use of a computer-based system also provides benefits in flexibility for changing rates, assumptions, and methods to roll up and report results.

The Power Tool is a combination of special software designed for on-the-spot estimating tasks, and a versatile handheld computer. The software was developed by B&W Hanford Company (BWHC) Faster Services, BWHC Technology Integration, and Polestar Applied Technologies for the Department of Energy. This application has improved the ability to achieve accurate, efficient estimates for major D&D projects. The software provides a preset form that allows a field estimator to input measured and observed data for the room or equipment being considered for D&D. The software is loaded on a small handheld PC that can also be held at a convenient height for data entry by a neck-strap. After data for a number of rooms and from several field estimators is obtained, the information can be uploaded into a standard desktop PC for rollup and other manipulation.

BWHC obtained several of these Power Tool units for use in D&D task estimates during the preparation of the PFP Integrated Program Management Plan in 1999. Personnel preparing estimates for the plan took the Power Tool units into the facilities and walked through each room, inputting data on the room dimensions, functions, piping, ducting and various equipment. The results were downloaded and rolled up into summary tables on standard personal computers.

The estimates, which were developed using the Power Tool software, proved easy to use in the rollups on standard computers. Through the deployment of this technology, the PFP Integrated Project Management Plan was completed on schedule and will serve as the baseline plan for the D&D of the facility. The Power Tool estimating system is now available for use in similar detailed planning exercises at the Hanford Site.

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Funding for technology deployment was provided by the U.S. Department of Energy.

Fluor Daniel Hanford, Inc., Technology Management
TM-DEP-99-015